DOCUMENT RESUME

ED 257 824 SP 026 230

| | |
|---|---|
| AUTHOR | Yinger, Robert J.; Clark, Christopher M. |
| TITLE | Using Personal Documents to Study Teacher Thinking. Occasional Paper No. 84. |
| INSTITUTION | Michigan State Univ., East Lansing. Inst. for Research on Teaching. |
| SPONS AGENCY | National Inst. of Education (ED), Washington, DC. |
| PUB DATE | Feb 85 |
| CONTRACT | 400-81-0014 |
| NOTE | 35p. |
| AVAILABLE FROM | Institute for Research on Teaching, College of Education, Michigan State University, 252 Erickson Hall, East Lansing, MI 48824 ($3.25). |
| PUB TYPE | Reports - Evaluative/Feasibility (142) |
| EDRS PRICE | MF01/PC02 Plus Postage. |
| DESCRIPTORS | *Diaries; Elementary Secondary Education; *Planning; *Public School Teachers; *Research Methodology; Social Science Research |
| IDENTIFIERS | *Journal Writing |

ABSTRACT

The use of personal documents in social science research, and in particular, methods and limitations of journal keeping in research on teaching planning, are discussed. Field studies are reported in which teachers were asked to record their planning deliberations and the accompanying thoughts in a personal journal. While it became apparent that for many of the teachers journal writing was a valuable tool in their planning and teaching, the question arose as to whether or not journal writing, as a personal document, can be defended as a legitimate inquiry mode for studying human experience, and if so, what safeguards must be instituted to defend the quality and validity of the research. A review of social science research methodology studies revealed differing opinions on the validity of using personal documents as a basis for drawing firm conclusions on the thinking and planning processes. It is concluded that while the journal is an imperfect instrument for learning about human thought, journal keeping as a research tool is a benign, generative, and economical device for recording teachers' descriptions of and insights about their planning and teaching. (JD)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

Minor changes have been made to improve reproduction quality.

Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

C.M. Clark

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

SCOPE OF INTEREST NOTICE

This Eric Facility has assigned this document for proccesing to:

In our judgment, this document is also of interest to the Clearinghouses noted to the right. Indexing should refect their special points of view

ED257824

SP 026 230

Occasional Paper No. 84

# USING PERSONAL DOCUMENTS TO STUDY TEACHER THINKING

Robert J. Yinger and Christopher M. Clark

Institute for Research on Teaching

College of Education Michigan State University

Occasional Paper No. 84

# USING PERSONAL DOCUMENTS TO STUDY TEACHER THINKING

Robert J. Yinger and Christopher M. Clark

Published By

The Institute for Research on Teaching
252 Erickson Hall
Michigan State University
East Lansing, Michigan 48824-1034

February 1985

This work is sponsored in part by the Institute for Research on Teaching, College of Education, Michigan State University. The Institute for Research on Teaching is funded primarily by the Program for Teaching and Instruction of the National Institute of Education, United States Department of Education. The opinions expressed in this publication do not necessarily reflect the position, policy, or endorsement of the National Institute of Education. (Contract No. 400-81-0014)

## Institute for Research on Teaching

The **Institute for Research on Teaching** was founded at Michigan State University in 1976 by the National Institute of Education. Following a nationwide competition in 1981, the NIE awarded a second contract to the IRT, extending work through 1984. Funding is also received from other agencies and foundations for individual research projects.

The IRT conducts major research projects aimed at improving classroom teaching, including studies of classroom management strategies, student socialization, the diagnosis and remediation of reading difficulties, and teacher education. IRT researchers are also examining the teaching of specific school subjects such as reading, writing, general mathematics, and science, and are seeking to understand how factors outside the classroom affect teacher decision making.

Researchers from such diverse disciplines as educational psychology, anthropology, sociology, and philosophy cooperate in conducting IRT research. They join forces with public school teachers, who work at the IRT as half-time collaborators in research, helping to design and plan studies, collect data, analyze and interpret results, and disseminate findings.

The IRT publishes research reports, occasional papers, conference proceedings, a newsletter for practitioners, and lists and catalogs of IRT publications. For more information, to receive a list or catalog, and/or to be placed on the IRT mailing list to receive the newsletter, please write to the IRT Editor, Institute for Research on Teaching, 252 Erickson Hall, Michigan State University, East Lansing, Michigan 48824-1034.

Co-Directors: Jere E. Brophy and Andrew C. Porter

Associate Directors: Judith E. Lanier and Richard S. Prawat

Editorial Staff
Editor: Janet Eaton
Assistant Editor: Patricia Nischan

## Abstract

This paper discusses the use of personal documents in social science research and, in particular, methods and limitations of journal keeping in research on teaching planning. The authors argue that journal writing involves the creation of a unique and useful form of personal document and that, with appropriate safeguards, journals written by teachers can be used as a valid and reliable source of data about their planning processes.

# USING PERSONAL DOCUMENTS TO STUDY TEACHER THINKING[1]

Robert J. Yinger and Christopher M. Clark[2]

In this paper we discuss journal writing as a method for studying teacher thinking. Two themes interweave throughout the discussion. The first pertains to method and the issues concerning the use of personal documents in social science research. The second component is also one of method, but of method as worked out in practice--how we have conducted our research using journal writing as a research tool to study teacher planning processes. We now think of journal writing as the creation of a unique type of personal document. This has not always been so. A little history may better illuminate how we have developed this viewpoint.

In 1976, we began our program of research on teacher planning with a case study of one elementary school teacher. In this study, we attempted to incorporate and integrate ethnographic methods with methods currently popular in information-processing psychology. The study was successful in that it produced a richly detailed description of the teacher's planning activities and a theoretical model of the planning process differing significantly from traditional planning theory (see Yinger, 1977; 1980). During the following year we

---

[1]This paper is based on one presented at the Midwest Regional Conference on Qualitative Research in Education at Kent State University, Kent, Ohio, October 1981.

[2]Robert Yinger is a former research intern with the IRT's now completed Teacher Planning Project and is currently an associate professor of education with the Department of Educational Leadership at the University of Cincinnati, Cincinnati, Ohio. Christopher Clark coordinated the now completed Teacher Planning Project and presently co-coordinates the Written Literacy Forum and is a professor with the Department of Counseling, Educational Psychology, and Special Education, Michigan State University.

The authors acknowledge the assistance of Jack Gajewski and Robert Hill as co-researchers in the field study of the life history of a plan referred to herein.

set out to extend these findings and to test the model through a series of studies incorporating laboratory, survey, and field methods (Clark & Yinger, 1979).

Among these studies, the field research presented the greatest challenge. Yinger spent five months following one teacher through the school day, primarily relying upon "thinking aloud" methods to tap the teacher's thought processes. This method was effective, but extremely labor intensive in both the collection of verbal protocols and in their transcription (see, for instance, Newell & Simon, 1972; Newell, 1977; and Simon, 1979, for more details on these methods).

We settled this problem by deciding to substitute journal keeping by teachers for thinking-aloud methods. Teachers were asked, to the extent that they could, to record their planning deliberations and the accompanying thoughts in a personal journal that they were to keep constantly at hand. In instituting this method, we viewed journal writing as a kind of "thinking aloud on paper" and based our research rationales on existing defenses (e.g., Newell & Simon, 1972; Ericsson & Simon, 1980).

Our reconsideration of the nature of the journal writing experience in the past few years has been based primarily on two experiences. The first experience occurred very soon and unexpectedly in our field research. We had anticipated that the requirement to keep a journal of one's planning deliberations in addition to the normal load of the planning and teaching process would initially be very difficult for many teachers and require a substantial amount of support and encouragement from us as researchers. Though the journal-keeping process was new and difficult for some of the teachers, soon after the study began they needed little support from us. For almost all of the teachers, journal writing became a valuable tool in their planning and teaching.

Writing and reflecting on what they were doing became, for many of the teachers, a powerful means to professional development. It quickly became evident that our research method was having profound effects on our teacher-participants. These experiences led us to spend the next couple of years exploring and developing journal writing methods as professional and self-development techniques for educators.

Our early experiences with journal writing caused us to reexamine our conceptions of journal writing as thinking aloud on paper but with only modest progress. Thinking aloud had been admirably defended by a number of researchers against the criticisms of it being merely another form of introspection. Simon and his colleagues claim that since verbal reports are collected in the process of performing a task, the subject is not producing an introspective account of past experience but merely an on-going verbal report of objects in consciousness. Within this framework, we felt that journal writing was more akin to thinking aloud than to introspection because we were attempting to gather a written report of what teachers were thinking about during the planning process rather than an introspective reconstruction of the process once it had been completed. In short, we stuck to our original conceptions because the alternatives seemed even less accurate.

Recently, a second experience brought us to our current conceptualization. This concerned an exploration of the important differences between spoken and written communication. The essential difference is that, for the research participants, thinking-aloud methods required them to produce oral products that for them were quickly forgotten, while journal writing required them to produce written accounts of their thinking that were permanent and available for reflection. Also, research in written composition suggests that writing functions not only as a form of expression but that the nature of the

cognitive processes required by writing makes it a very effective way to learn: We learn as we write. (For a further discussion of this line of reasoning, see Yinger & Clark, 1981.)

When we realized that journal writing presented a very different set of tasks for a research participant than did thinking aloud, we sought another methodological rationale. We found this rationale in the lesser known tradition of using personal documents as a source of data for social science research. Thus the major questions of interest here are whether or not journal writing, as a personal document, can be defended as a legitimate inquiry mode for studying human experience (in this case, thinking and planning), and, if so, what are the safeguards that one must institute to defend the quality and validity of the research? To address these questions, we discuss some issues about the use of personal documents raised by other social scientists and then focus on crucial issues about journal writing and how we have addressed them in our research.

## Personal Documents as Research Tools

The use of personal documents in social science research was pioneered by Thomas and Znaniecki (1927) in their multivolume work entitled *The Polish Peasant in Europe and America*. This work inspired a series of monographs sponsored by the Social Science Research Council (SSRC) between 1939 and 1945 evaluating the usefulness of these methods. Many of our comments here reflect the thinking of two psychologists, Gordon Allport and Robert Angell, who examined personal documents under the sponsorship of the SSRC to assess the usefulness of these types of data as an information source about what goes on in people's minds (Allport, 1942; Angell, 1945).

Personal documents include a variety of personally created products: written, oral, and visual. They include autobiographies, letters, diaries, questionnaire and interview responses, dream records, confessions, compositions, and art, among others. "Any self-revealing record that intentionally or unintentionally yields information regarding the structure, dynamics, and functioning of the author's mental life" may be defined as a personal document (Allport, 1942, p.xii). Defined in this way, personal documents constitute a class of case study materials, specifically, first-person case documents.

The general question of interest to the SSRC-sponsored appraisals of personal documents as data sources was "What is the status of written documents as evidence about human behavior on the one hand and hypotheses about human behavior on the other?" Blumer's analysis of *The Polish Peasant* (Blumer, 1939) focused on four standards of judgment for human documents: (1) representativeness of the document as a source of common experience, (2) adequacy of the document for the purpose to which it is employed, (3) reliability of the document (as checked by independent sources), and (4) the validity of interpretations drawn from a single document. According to these standards, Blumer concluded that the documents employed by Thomas and Znaniecki, *taken individually*, failed to measure up to any one of the four judgment criteria. Yet, as Allport states,

> Such devastating negative evidence does not lead Blumer to conclude that human documents fail as scientific aids. He hastens to state two important qualifications: (1) To set aside the documents as having no scientific value, he says, would be to "ignore the understanding, insight, and appreciation which their careful reading yields." (2) Taken collectively, he finds, the documents fare much better, for since the documents are numerous, when pieced together they tend to give consistent pictures. The sheer weight of numbers tends to confer upon the documents "representativeness, certain adequacy and reliability that cannot be ignored." For three of the four criteria of scientific acceptability, then, Blummer finds personal documents measure up *if they exist in sufficient numbers* (italics in original) to create a preponderance of evidence. (1942, p.20)

Allport (1942) responds to a number of criticisms about the use of personal documents, organizing them into three groups: (1) those that are irrelevant, trivial, or false; (2) those that are true under certain circumstances or in a limited sense; and (3) those that are generally true and admittedly serious. In the first group, Allport places the charges that personal documents by their very nature are nonobjective, nonvalid, and nonreliable. He dismisses the first criticism as irrelevant because, he says, personal documents are by definition subjective data; objectivity has never been claimed. In spite of this subjectivity, he argues, validity of personal documents can be supported by both quantitative and non-quantitative means. Non-quantitative indicators of validity include internal consistency, plausibility, known reliability of the author, and corroboration by independent evidence. Quantitative criteria of validity have included such things as correlations between judges' ratings of separate documents or sources (Allport cites specific studies as examples here). The charge of unreliability is dismissed as having "no particular meaning unless it be in terms of mood--a danger easily avoided by taking samples of writing or interviews distributed in time" (Allport, 1942, p.141).

In this second group, Allport lists the contingent criticisms, those that are true of some documents or true of all personal documents under certain conditions. These include unrepresentativeness of sample, oversimplification, deliberate deception, errors of memory, and blindness to motives. Representativeness of sample, argues Allport, is only relevant within a nomothetic framework where one wishes to easily generalize to a larger population. This is often not the case in studies incorporating personal documents; rather, an emphasis is often placed on description for ideographic purposes.

Oversimplification may result from a writer's need for closure and consistency within a personal account. This is more of a problem with retrospective accounts like biographies than with on-going records like diaries or journals. This criticism is not unique to personal documents, and Allport is quick to state that oversimplification is also common to third-person documents as well as to laboratory and field investigations.

Purposeful deception within a personal document can become a problem with certain uses of personal documents, but detection of fraud is often possible through the validity checks mentioned above. Strict guarantees of anonimity and a de-emphasis of evalution might also reduce the frequency of deliberate deception, Allport suggests.

Errors of memory are acknowledged by Allport as potential dangers but are not considered particularly troublesome, "for the fact that the subject structures and recalls his life in a certain manner is what we want to know" (1942, p.136). Errors of memory are less of a problem in diaries and journals than in documents produced further from immediate experience.

Regarding blindness to motives, Allport suggests that though "ultimate" motives are often hidden from one's awareness, proximal motives and intentions are not. Even though true causes and reasons for behavior may not be readily conveyed in personal documents, he concludes that much can be gained from closer scrutiny of a writer's own story of reasons for his or her conduct.

In the final group of criticisms, those considered most serious, Allport lists only one criticism: that conceptualization is arbitrary or predetermined by the writer or by the researcher. Conceptualization springs from the interaction between theory (both implicit and explicit) and induction, and this interaction is, as Allport states, the essence of the methodological problem of personal documents. As Blumer writes:

> It is clear . . . that the letters presented by Thomas and Znaniecki are not the inductive material out of which they have constructed their elaborate analysis of Polish peasant life. It is equally clear, however, that the letters are not mere illustrative material for the exemplification of their theoretical analysis. The actual relation is somewhere between. The numerous and thoughtful notes to the letters give us every reason to believe that the authors mulled over the letters a great deal and derived much from them in the way of ideas, suggestions, and generalizations which they incorporated into their theoretical statements. There is equal reason to believe that they already had a rather extensive theoretical scheme (built out of experience that had nothing to do with the letters) with which they approached the letters and which guided and frequently coerced their interpretation of the letters. Thus, there has been an interaction between theory and inductive material, but an interaction that is exceedingly ambiguous. (1939, p.37f)

Allport seems to agree with Blumer that, for the most part, documents do appear to take their meaning and intelligibility from the accompanying comments and interpretations.

> No standard exists to demonstrate the *necessary* logic of an explanatory theory. . . . Even where induction is used, seldom, if ever, do we find that the interpretation of the document is *compulsory*. Sometimes it is clearly forced or strained; but more often it seems to be merely *one* of *many* (emphasis in original) possible interpretations that could be imposed on the material. (Allport, 1942, p.21,142)

This basic issue of interpretation, as first raised by Blumer, furnished the theme for a conference on Blumer's critique (sponsored by the Social Science Research Council and published in the same volume) under the central question of how does one know when one has a valid social theory? Briefly stated, six criteria by which to assess the validity of a theory were proposed by the conferees:

1. Feelings of subjective certainty
2. Conformity with known facts
3. Mental experimentation (referring to any mental manipulation of theory such as Max Weber's proposed test of contemplating an alleged cause or critical factor while attempting to imagine life without its presence)
4. Predictive power

5. Social agreement

6. Internal consistency

In retrospect, these criteria seem to be mainly directed at preventing conceptualization from being unsystematic or arbitrary. They do not address the issue of predetermined conceptualizations and the interplay between theory and data. More will be said about this topic as we direct our discussion to a more [illegible] defense of journal writing as a valid research method.

## In Defense of Journal Writing

Studying human behavior in natural settings presents a basic paradox: To understand human behavior in these situations one needs to observe how people behave when they are not being observed. This statement raises a question that is crucial in all research, namely, how does one know if the behavior being observed is not merely due to the fact that a person is being observed? In terms of the discussion in the previous section, this is a general question of the representativeness, adequacy, and validity of a research method and its data. Given our acknowledgement earlier of the potential power of writing as a thinking and learning mode, how can we defend journal writing as a research method?

The following sections will address this question by describing the ways we have attempted to protect both the validity of journal writing as a data source and the validity of our interpretations of this data. The context for this discussion will be a description of a set of case studies of teacher planning where journal writing was the major data source. The framework we will use is the four standards for human documents introduced by Blumer (1939) that were discussed above: (1) representativeness of the document as a source of common experience, (2) adequacy of the document for the purpose to which it

is employed, (3) reliability of the document, and (4) the validity of the interpretations drawn from a single document.

Protecting the Validity of Journal Writing as a Data Source

Adequacy of journal writing. Central to assessing journal writing as an adequate data source in research on teacher thinking is whether or not the act of journal writing causes teachers to engage in activities (specifically, mental activities) that would not be taking place except for the research. Stated differently, does journal writing create or necessitate a reflective stance that is not normally present in teacher thinking, or does it merely record (and possibly intensify) an already existing and functioning mode? We subscribe to the latter position for three basic reasons.

First, when asked about the journal-writing process, the teachers themselves attested to the representativeness and validity of their own journal entries. That these reports are not due to self-deception or to an inability to discern the similarities and differences between performance in constructed versus real-life situations is supported by teacher's reports of non-representativeness of performance in more artificial planning tasks (see for instance, Morine-Dershimer & Vallance, 1976).

The second reason for subscribing to our position that journal writing does not create artificial cognitive phenomena is the growing theoretical and empirical work attributing a great deal of importance to teachers' thoughts and intentions. Among these orientations are the intentionalist and action frameworks for describing teaching practice (Fenstermacher, 1978; Kerr, 1981); conceptions of the teacher as decision maker (Shavelson, 1976); as thinker (Clark & Yinger, 1977; Shavelson & Stern, 1981); and as clinical information processor (National Institute of Education, 1975); and conceptions of teaching

as professional activity with design at its core (Clark & Yinger, 1980; Simon, 1981).

The third reason for asserting that journal writing does not create artificial cognitive phenomena is based on an analysis of reactivity in naturalistic research. Jacob (in press) argues that the basic issue in determining the effects of a research method on a participant's behavior is one of determining the degree to which certain behavior is natural or unnatural. This viewpoint acknowledges that all research activities affect participants' behavior to some extent. The issue of reactivity is directed away from the focus on mere change in behavior to a focus on changed behavior that is distorted from natural ways of acting.

The approach that Jacob takes toward this issue is one of defining natural and unnatural behavior in terms of a participant's own perception of a researcher's status and role. So-called unnatural behavior, she says, is more likely to occur when the participant perceives the researcher as being in a position of superiority or power (e.g., that of supervisor or evaluator). In these instances, behavior is more likely to take on performance characteristics. So-called natural behavior will more likely take place when the participant defines the researcher as a neutral observer or as having some type of hybrid status within the setting. Interpreting the amount of reactivity, then, becomes a task of trying to understand how participants in a setting are defining the researcher at any given moment (Jacob, in press, p. 5).

Our position about reactivity has been one of acknowledging its existence, attempting to map carefully the change occurring during the process of research, and keeping in touch with the participants' perception of our role as researchers. We also acknowledge the possibility that participants interpret and reconstruct events, but we take a stance that personal interpretation

of experience becomes a natural basis for thinking and planning. Thomas, in his response to Blumer's critique of *The Polish Peasant* stated:

> A document prepared by one compensating for a feeling of inferiority or elaborating a delusion of persecution is as far as possible from objective reality, but the subject's view of the situation, how he regards it, may be the most important element for interpretation. For his immediate behavior is closely related to his definition of the situation which may be in terms of objective reality or in terms of subjective appreciation--"as if" it were so. . . . If men define situations as real, they are real in their consequences (Blumer, 1939, p. 85).

Given the assumption that journal writing fosters natural modes of behavior in teachers, there might still be questions about the suitability or adequacy of this method for recording the planning process. In other words, are there certain characteristics of journal writing in general that make it an especially adequate data-collection method?

Journal writing is especially suited to recording thinking and behavior over time. It is a proximal data source, that is, journal entries are usually made soon after an event or reflect current thoughts about some past occurrence. Journals with date and time entries preserve sequence and duration of activities. Journal writing provides a written record of thoughts and deliberations that is similar to other written notes or records that teachers produce as they make plans and teach. In summary, journal writing seems to be a natural extension of deliberative behavior and one uniquely suited to represent planning and action.

Representativeness and reliability of journal writing. Our research goal has been to examine and describe teachers' planning behavior in actual classroom contexts and to preserve as much as possible the natural thinking behavior of our research participants. In our case studies we approached this goal through three aspects of the research design: (1) what we call the "life

history" concept, (2) regarding teachers as research collaborators, and (3) the use of naturalistic data-gathering techniques.

The life-history concept. Our purpose here was to trace the entire process of planning from the moment a teacher first came into contact with an idea or a set of materials, through the elaboration and adaptation of the plan to fit a particular group of students, to implementation of that plan, and, finally, to evaluation of both the planning process and the success of the implementation. We viewed each study as a longitudinal record or life history of a plan from conception to completion. We even found ourselves explaining this concept to teachers using the analogy of a parent's baby book, which can become the repository for an infinite variety of notes, records, photographs, and other important traces of a child's growth and development.

We wanted to obtain a number of instances of a complete planning sequence that might replicate, on a smaller scale, Yinger's initial case study and thus refine and elaborate our understanding of the planning process. More specifically, these research questions guided our inquiry:

Why do teachers plan?

What factors (curriculum materials, student characteristics, administrative regulations, etc.) do teachers take into account in planning?

What criteria do teachers use to evaluate their planning?

What forms do teachers' plans take?

What kinds of individual differences exist in teacher planning processes?

How are the various psychological processes (e.g., judgment, perception, problem solving) coordinated and orchestrated during planning?

What is the relationship between teacher planning and subsequent teacher and student behavior?

In short, the goal of the life history concept was to get a complete picture of the planning sequence, to produce a record of thinking behavior from start to finish. This longitudinal approach is designed to accumulate, over a reasonable time, a number of different data points that, when taken together, will produce what Allport referred to as a "preponderance of evidence." This long-term approach to studying a question contributes significantly to the representativeness, reliability, and adequacy of a data set.

Teachers as collaborators. An important aspect of our approach to the research was our conception of the role of the teachers we worked with. We wanted to involve the teacher as a full participant in the research as much as possible. We defined our task as researchers as one of trying to learn as much as we could about teacher planning from the teacher's point of view. Our primary information source about teacher planning was the reflections and reports of the teachers themselves. We thought of and treated the teachers who agreed to work with us as collaborators in this research effort and helped them to understand as fully as possible our goals and research questions and the reasons behind each step of the procedure.

The initial contact with each potential teacher-participant emphasized his/her role as a collaborator who would be asked to record, reflect upon, and discuss a large part of the data on which the analysis would be based. We also emphasized that all the procedures had been pilot-tested and that the teacher with whom we had conducted the pilot test reported that he had found the procedure useful and interesting--an experience that taught him something about his own planning behavior and gave him a useful record of a successful teaching unit. Furthermore, we emphasized to our teacher-collaborators our desire to make the study as natural and representative an experience as possible.

We elaborated on this in an orientation for teachers to the study which included an overview of the research questions of interest, the ways the teachers would participate in the research, and specific directions and suggestions for keeping the planning journal.

By doing research in natural teaching situations and by involving teachers as participants in our research, we were further able to guard against threats to the representativeness and reliability of the data. Reliability defined as consistency of behavior (doing the same thing over and over again) is really of little concern in this kind of research, because we expect behavior to be adaptive and responsive to situational differences. By keeping a close record over time, consistency of action can be checked. Reliability defined as trustworthiness is also supported by close collaboration and participation in the research. For instance, knowing that the data will not be used for evaluative purposes should reduce or eliminate the possibility of purposeful deception.

Allport's assessment of the threats to the validity of personal documents as data sources listed predetermined conceptualization as the most serious. What subjects or participants think is expected of them can seriously distort behavior in any kind of social science research. We have attempted to minimize the "demand characteristics" of our case studies through close collaboration with the teachers and through specific discussion of this issue with them. Following is an excerpt from the orientation for teachers to the study dealing with this issue:

> In asking you to make a record of your own before-lesson thinking and decision making, we have been conscious of the fact that you may understandably want to put more than average thought and planning in the unit. However, we think that you will agree that, particularly as we become more experienced as teachers, many of the things that we do in any teaching situation become relatively routine and automatic, and we don't always have to think far ahead about them.

> Sometimes the topic of a unit or lesson, the teaching approach used, or the time available can also make it unnecessary or difficult for us to spend a large period of time considering and making decisions about the coming lesson. For some lessons, then, we may actually spend little time consciously forming a plan of action before the lesson begins. At the other extreme, many hours of careful thought and planning may have occurred before some lessons get underway. If the teachers who are assisting in the study plan the unit in either of these extremes we will probably not gain a very accurate or balanced impression about this aspect of teaching.
>
> Bearing these points in mind, we would ask you to plan the unit in a way that is "normal" for you and to report as honestly as possible your thoughts during the planning process. . . . We recognize that planning for a particular unit may occur days, weeks, or even months before the unit actually takes place. Similarly, unit planning will most likely take place over a number of occasions. Thus, your notes will be made on more than one occasion, and they may make reference to decisions that were originally made some time previously. It is possible that when you look back over the notes that you have made you will feel that some of the things you have thought about or the details of the plan of action that you have in mind seem to be trivial, irrelevant, or even inappropriate. However, remember that it is the "REAL" world of teaching that we are wanting to learn about, so no item of information can be too insignificant or irrelevant.

Naturalistic approach. Studying teacher planning in actual classroom contexts is best accomplished by using field research methods or what have come to be called naturalistic research methods. A detailed rationale and description of the characteristics of these methods and a number of good defenses of them have appeared elsewhere (e.g., Agar, 1980; Pelto & Pelto, 1978; Schatzman & Strauss, 1973). What follows is a brief description of the research design and procedures used in this study to further promote the representativeness, adequacy, and reliability of journal writing as a data source.

Six upper elementary teachers participated in the study. The research produced life histories of five plans; one plan was produced jointly by a two-person team. Each teacher was asked to plan a unit on writing that s/he had never taught before. We allowed the teachers approximately three weeks

for planning and approximately two weeks for classroom implementation. During these five weeks, the teachers participated in five research activities:

1. a preliminary interview;
2. keeping a journal recording their thinking and planning from the time they first began thinking about an idea for a language arts unit, through the planning process to the idea's implementation in the classroom;
3. progress interviews during the planning period to discuss and clarify journal entries;
4. classroom visitations and observations--once at the beginning of the study and once during the teaching of the unit; and
5. a final interview to look back on the planning and implementation process.

Preliminary interview. An interview schedule was developed to obtain a general description of each teacher's background, the classroom and school settings, and the teacher's general ways of thinking about such issues as curriculum, use of time, and planning. The preliminary interview also served as an occasion during which the researcher and the teacher could get to know one another better and become more familiar with each other's working styles. (One researcher was assigned to each teacher, or pair of teachers in the case of the teaching team. This procedure became another check on the validity of the data because the researcher stayed with one case for the duration of the study and was better able to judge the internal consistency of data generated throughout the process.) At the end of the preliminary interview, the researcher gave the teacher(s) a copy of the Teacher Planning Questionnaire that was to be completed before their next meeting. This questionnaire was developed for a study collecting self-reports of teachers' plans (see Clark & Yinger, 1979) and provided important additional preliminary information in that it asked teachers to provide fairly detailed, retrospective accounts of several recent planning decisions.

Journal keeping. The major source of information about teacher planning in this study came from the teachers' planning journals. Each teacher was given a journal consisting of a spiral notebook with each page divided into two columns by a line drawn down the middle of the page. Teachers were asked to use the left column to record their thoughts and ideas while actually in the process of planning the unit. As ideas came to mind, were considered, accepted, rejected or modified, teachers were encouraged to jot them down in a simple annotated or abbreviated form. At the end of the planning session or the day, they were to go back to the journal and fill in, elaborate, or comment on notes that might have been unclear or illegible. Teachers were also instructed to note in the left-hand margin when and where they began each entry and when they stopped writing.

The right-hand column was to be used to record the teacher's thoughts and reflections within the planning process. Whereas the left-hand column would chronicle the kinds of things that might be recorded in a plan book, "to do" list, or other form as part of the normal planning process, the right-hand column was an exercise not normally a part of the planning sequence. Participants were urged to write their reflections about their planning opposite the parts of the plan they had referred to. In this way, they would produce a record of the developing plan accompanied by the thinking that was creating it. Teachers were told that if this approach was followed, we would be better able to follow the actual sequence in which planning thoughts occurred. Finally, we asked the teachers to use the carbon paper supplied with the journal to make a copy of each journal page. The researcher collected these copies before each interview session. If the teacher had prepared specific worksheets, task cards, or other materials not a part of the journal, they were asked to include a sample with their copies.

First classroom visit. The first classroom visit further acclimated the teacher and the students to the presence of the researcher; acclimated the researcher to the teacher, the students, and classroom setting; and gave the researcher a preview of teacher planning and its relationship to subsequent classroom activity. The emphasis of this observation was to develop a general portrayal of the setting, schedule, typical activities, and structure of the teaching day. The researchers used naturalistic observation methods. The product was a narrative description of classroom activity during the observation period (this initial visit typically took a full day).

Progress interviews. Regular interviews were scheduled twice weekly with each teacher. First, the interviews were an opportunity for the researcher to gather further information about journal entries or other data. This was facilitated by the researcher arriving some time prior to the scheduled interview time and picking up and examining the copies of the journal entries made since the last visit. Based on this examination, we were then able to prepare further questions, suggestions, comments, and reminders to be mentioned during the subsequent interview. The interview also became a time to ask the teacher to explain or elaborate any journal entries that appeared to be unclear or incomplete. Second, the interviews were held to encourage the teachers and to clarify, if necessary, the journal-keeping procedures. As mentioned, we were surprised to find the journal writing process readily picked up by nearly all of the teachers so that after the first week little time was spent on these matters.

Second classroom visit. The second classroom visit allowed the researcher to observe a portion of the planned unit being implemented. This observation, scheduled near the unit's mid-point, provided a vivid and more complete

impression of the unit in action. Also during the visit a post-observation interview took place in which the question of the relationship between planning and subsequent activity could be discussed in a more concrete context. In addition to recording a general description of the pattern and sequence of classroom activity, the observer was to particularly note any apparent references that the teacher made to the plans during their enactment or any apparent modifications to the plans. These events were followed as soon as possible by the post-observation interview.

The post-observation interview was viewed as an important source of information concerning the relationship between teacher planning and teacher behavior. During the interview, the researcher tried to get a feel for the teacher's evaluation of the teaching session and the basis for that evaluation (e.g., What was the teacher attending to that influenced his or her judgment about the quality of the session?). Also, the researcher tried to get an idea about the representativeness of the observed session and the teacher's perception of the influence of knowing that this particular session would be observed.

Final interview. The final interview occurred after the teaching of the unit was completed. It was the last formal contact between the researcher and the teacher. The major purpose of this interview was to have the teacher look back over the course of the entire study and reflect on his or her planning. Discussion topics included a retelling of the planning and teaching experience during the past five weeks in the teacher's own words, the teacher's overall assessment of the planning and teaching process, and what s/he might do differently next time. Teachers were also asked to reflect on their own planning style and to discuss what purposes planning served in their teaching (i.e.,

why they planned and the ways in which planning was important to them). Finally, they were asked to give their impressions of how complete and typical the planning entries in their journals were and to comment on any important information that they felt was missing or that had not been discussed. Also, teachers were asked to comment on how participating in the study had affected them.

## Protecting the Validity of Conceptualization Resulting from Data Analysis

The bridge from research data to theory has long been a subject of concern to scientists, even those advocating more quantitative methods (e.g., Cornfield & Tukey, 1956). As discussed earlier, Allport considered the potential for predetermined or arbitrary conceptions by the researchers the most serious criticism of the use of personal documents in social science research. The basic issue is, as Blumer stated, one of whether personal documents serve as the inductive material out of which theory is constructed or merely become illustrations of existing theory.

We have taken the position that, in reality, both of these practices occur. Inquiry and conceptualization involve a dynamic interaction between data and theory. At times data give rise to conceptualization; at other times, data confirm prior notions. This interaction has been acknowledged and drawn upon in the social sciences by researchers advocating the development of "grounded theory" (e.g., Glaser & Strauss, 1967). What must be guarded against, however, in this interaction between data and theory is the tendency (or temptation) for the interaction to lean too heavily in favor of theory. When data become solely illustrative or when only supportive data are collected or analyzed, the researcher may be fairly criticized for arbitrary and predetermined conceptualization.

This danger is not unique to the use of personal documents or other naturalistic or qualitative approaches. Unfortunately, the use of sophisticated statistical techniques and research designs in more controlled, experimental research has obscured the fact that pure induction, objectivity, and the necessary logic of an explanatory theory are beyond the reach of any type of social science research. What follows is a description of how we have tried to protect the validity of our conceptualization in the context of appreciating the research process as an interactive and very human enterprise.

Procedural considerations. In naturalistic research, conceptualization is an on-going part of the inquiry process. Since the research questions (and sometimes the procedures) are refined and modified by the progress of the study, the validity of the researcher's conceptualization may be facilitated by certain procedural considerations.

When we described our methods earlier, we also discussed most of the ways we have attempted to check our thinking about the research as we conducted it. Briefly summarizing, three aspects of the design and method allowed us to assess our interpretations and ideas.

The first was the assignment of one researcher to each participant (or team of participants) for the entire research period. This encouraged consistency of the conceptualization process through an on-going contact with the same set of data and the same process. This assignment not only allowed the researcher to check the internal consistency of the teacher's reports, but also to assess the internal consistency of his thinking from the data.

Second, we protected our conceptualization process by continually checking the plausibility of our thinking about the data. These plausibility checks occurred as individual researchers checked the plausibility of an idea

or interpretation against their knowledge of the participant and the data base (an instance of checking for internal consistency mentioned above). Also, the researchers checked conceptualizations against their own knowledge and experience about planning (all of the researchers had had extensive experience in classrooms; two were certified teachers who taught half-time and served as research-collaborators half-time). Finally, plausibility checks occurred at regular meetings of the four researchers to share ideas, work out methodological difficulties, or deal with any other matters of concern to the research project.

The third aspect of the research design that functioned as a check on our thinking from the data was our use of multiple data sources. This approach, often referred to as triangulation, was most useful in checking a conceptualization that arose from one particular data source. For instance, if a researcher picked up a particular idea from a teacher's journal, it might be possible not only to check previous entries for confirmation or refutation but also check the idea against the data from interviews, observation, or from the self-report instrument administered at the beginning of the study.

Data analysis. Each of the five plans produced in this study was unique, differing widely in topic, activities, and duration. To date, only portions of the data have been analyzed, and then, only in a preliminary manner (see Clark & Yinger, 1981, for a general report of this data). The major strategy we are using for the analysis of this extensive data set is to approach the task using multiple analysis methods, a sort of triangulation of analysis. Thus far we have used three different approaches.

Coding along topical and theoretical lines. Our first attempts at summarizing the life histories of the five plans were through a content

analysis of the planning journals. The framework used for developing coding categories and topics was based on the models in Yinger's original study. For example, he proposed a model of the planning process characterizing planning as a problem-solving activity that proceeds in a cyclical manner progressively elaborating goals, ideas, and solutions. Three stages of planning were hypothesized: problem finding; problem formulation and solution; and implementation, evaluation, and routinization. More detailed processes and components were described within each stage that became the category system for the content analysis. For instance, within the problem-formulation and solution stage a general design process was proposed that included phases of elaboration, investigation, and adaptation.

In general, our attempts at coding the data according to these topics and categories has indicated support for Yinger's process model. The major danger of this kind of content analysis is the possibility of overlooking information that is not in agreement or that does not easily fit the conceptual framework. We are combating this by continually reminding ourselves of this danger (naturalistic research calls for a high degree of self-consciousness of method and procedure). We plan to further control for idiosyncratic errors by insuring that each journal is coded by one other member of the research team. Thus far, this awareness and a concerted effort to be on the lookout for counter examples has led us to discover some interesting variations in the planning process that we are attributing to planning style.

Researcher interviews. A major difference between naturalistic research and more controlled experimental research is that experimental research usually attempts to test a very specific hypothesis using a predetermined set of design procedures and instrumentation. In contrast, naturalistic research

proceeds from a more general research question (often in the form of "what's going on here?") incorporating a variety of methods and techniques that seem to best fit the evolving research questions and findings. Another way to state this is that, in experimental research, the researcher uses data collection instruments, while in naturalistic research the researcher *is* the data collection instrument.

Since so much of the data collected in a study of this type really resides in the mind of the researcher, we have been experimenting with a method to help each of us be more explicit in our perceptions and interpretations of life histories we worked with. We call this method researcher interviews. Basically, it involves one researcher interviewing another researcher about a life history. In addition to producing an oral description of the case study, it also allows for deeper probing and exploration of impressions and ideas that might be overlooked or minimized when working alone.

This is similar to case conference methods in which a number of individuals contribute a variety of perspectives to a single problem. In our researcher interviews, we have been able to explore ideas generated by our varying professional experiences or by the life histories we are working with. To date we have conducted one complete set of researcher interviews for one life history.

Inductive methods. Inductive methods of data analysis have been a cornerstone upon which naturalistic descriptions are built. A strong point of these methods is that the phenomena being studied are not forced into a predetermined conceptual framework by coding schemes or other methods. Instead, in naturalistic studies, researchers are advised to immerse themselves in a research setting until a set of interpretive frameworks emerge from the data.

In addition, these frameworks should be ones that convey meaning not only to the researcher as an outsider to the setting but ones that are meaningful to the research participants as insiders.

Naturally, induction plays a major role in this process. Unfortunately, in the eyes of some, there are no simple or straightforward methods for making sure this happens or of predicting in advance where or how it will take place. This, for most naturalistic researchers, is part of the art and craft of the inquiry process. For some researchers trained in positivistic, experimental traditions, this process contains too much "intuitive, sloppy, uncontrolled mumbo jumbo." There exist, in fact, several excellent defenses and descriptions of ways to protect the validity of this process in the naturalistic research literature (see references cited earlier regarding method).

Thus far we have used inductive methods on several of the cases. The general procedures we have followed when analyzing the planning journals have been to begin with repeated readings of the journal entries as the basis for initial ideas and questions. We followed up with additional passes through the data until trends and patterns began to emerge. This recursive process of rechecking theory against data and using data to generate theory produces the progressive elaboration of the kind of grounded theory that is a major goal of naturalistic research.

Additional analysis issues. One question that might still be raised about our analysis procedures is that, even though we have tried to triangulate our analysis efforts, we are still all basically operating out of the same conceptual framework, and, therefore, there is no real check on the validity of our interpretations. All naturalistic studies face this, and early critics of personal documents noted this too. Because no interpretation

can be defended as more accurate than another according to logical necessity or statistical probability, contemporary researchers are still relying on communicating their findings so that readers can assess the validity of their conceptualization according to criteria similar to those generated by the Social Science Research Council in 1938.

Two aspects of reporting the results of naturalistic research allow the reader to appeal to assessment criteria such as feelings of subjective certainty, conformity to known facts, predictive power, and internal consistency. One is an effort by the writers to convey as clearly and completely as possible their theoretical orientations, assumptions, and biases as well as their research methods and techniques. Then the reader can assess the degree to which the findings and conclusions might be attributed to the initial perspectives of the researchers. Second, providing enough examples of the data from which the interpretations were drawn to give the reader a feel for the data and an opportunity to judge excerpts for him/herself. Reporting any kind of research is to some extent an exercise in persuasive writing. In experimental research the conventions of design and statistical method are more widely agreed upon. In naturalistic research, each reader must be convinced in a manner that is not unlike the way the researcher came to his/her final conclusions.

## Summary and Conclusions

Our central thesis has been that personal documents in general, and journals in particular, can be a window through which to view some of the workings of the human mind. Teachers' journals used as we have described them here, do not provide perfect and complete records of teachers' planning and decision making. And these incomplete and imperfect representations of

teachers' thoughts must be painstakingly assayed, supplemented, and extrapolated from to yield concepts, models, and case studies, the fruits of a descriptive research paradigm. In these analyses, the window to the teacher's mind can also become a half-silvered mirror, reflecting some of the researcher's expectations, biases, and selective perceptions in unknown and varying proportions. These threats to validity can be reduced to some degree by the procedures that we have proposed (i.e., making the analyst's frame of reference explicit, triangulation, deliberate search for counter evidence) but can never be completely eliminated.

We are left to conclude that the journal is an imperfect instrument for learning about human thought. But the same can be said of any other device designed to probe and reflect the intricacies of the mind. Our experiences with using journal keeping as a research tool lead us to see it as a benign, generative, and economical device for recording teachers' descriptions of and insights about their planning and teaching. The danger of serious error resulting from use of journal entries as data seems small, while the promise of learning more about the psychology of teaching from the teacher's point of view looms large. The questions of when, how, and whether to use journal keeping in research on teacher cognitions should be answered only after considerably more empirical attention has been given to the matter. In the meantime, let research employing journal keeping as a window to the mind be judged as much by the usefulness of the knowledge it produces as by its procedural details.

## References


Agar, M.H. (1980). The professional stranger: An informal introduction to ethnography. New York: Academic Press.

Allport, G. (1942). The use of personal documents in psychological science. New York: Social Science Research Council.

Angell, R. (1945). A critical review of the development of the personal document method in sociology 1920-1940. In L. Gottschalk, C. Kluckhohn, & R. Angell (Eds.), The use of personal documents in history, anthropology and sociology. New York: Social Science Research Council.

Blumer, H. (1939). An appraisal of Thomas and Znaniecki's The Polish Peasant in Europe and America (Critiques of Research in Social Sciences: I). New York: Social Science Research Council.

Clark, C.M., & Yinger, R.J. (1977). Research on teacher thinking. Curriculum Inquiry, 7(4) 279-304.

Clark, C.M., & Yinger, R.J. (1979). Three studies of teacher planning. (Research Series No. 55). East Lansing: Michigan State University, Institute for Research on Teaching.

Clark, C.M., & Yinger, R.H. (1980). The hidden world of teaching: Implications of research on teacher planning (Research Series No. 77). East Lansing: Michigan State University, Institute for Research on Teaching.

Cornfield, J., & Tukey, J.W. (1956). Average values of mean squares in factorials. Annals of Mathematical Statistics, 27, 907-949.

Ericcson, K.A., & Simon, H.A. (1980). Verbal reports as data. Psychological Review, 87, 215-251.

Fenstermacher, G.D. (1978). A philosophical consideration of recent research on teacher effectiveness. In Shulman, L.S. (Ed.), Review of research in education (Vol. 6). Itasca, IL: Peacock.

Glaser, B., & Strauss, A. (1967). The discovery of grounded theory: Strategies for qualitative research. Chicago, IL: Aldine.

Jacob, E. (in press). La visita: A cultural approach to observer influence in Puerto Rico. In Robert Duncan (Ed.), Social research in Puerto Rico. San German, Puerto Rico: Interamerican University Press.

Kerr, D.H. (1981). The structure of quality in teaching. In J. F. Soltis (Ed.), Philosophy and education. 80th Yearbook of the National Society for the Study of Education, Part I. Chicago, IL: University of Chicago Press.

Morine-Dershimer, G., & Vallance, E. (1976). Teacher planning (Special Report C). San Francisco, CA: Beginning Teacher Evaluation Study, Far West Laboratory.

National Institute of Education (1975). Teaching as clinical information processing: National conference on studies of teaching. Report of panel 6. Washington, DC: National Institute of Education.

Newell, A. (1977). On the analysis of human problem solving protocols. In P.N. Johnson Laird & P.C. Wason (Eds.) Thinking: Readings in cognitive science. New York: Cambridge University Press.

Newell, A., & Simon, H.A. (1972). Human problem solving. Englewood Cliffs, NJ: Prentice-Hall.

Pelto, P.J., & Pelto, G.H. (1978). Anthropological research: The structure of inquiry (2nd ed.). Cambridge: Cambridge University Press.

Schatzman, L., & Strauss, A.L. (1973). Field research: Strategies for a natural sociology. Englewood Cliffs, NJ: Prentice-Hall.

Shavelson, R.J. (1976). Teachers' decision making. In N.L. Gage (Ed.), The psychology of teaching methods (National Society for the Study of Education yearbook). (Vol. 78, Part 1).

Shavelson, R.J., & Stern, P. (1981). Research on teachers' pedagogical thoughts, judgments, decisions, and behavior. Review of educational research, 51, 455-498.

Simon, H. (1979). Models of thought. New Haven, CT: Yale University Press.

Simon, H.A. (1980). The sciences of the artificial (2nd ed.). Cambridge, MA: MIT Press.

Thomas, W.I., & Znaniecki, F. (1927). The Polish peasant in Europe and America (2nd ed.). New York: Alfred A. Knopf. (Also in 5 vols., University of Chicago Press, 1918-1920).

Yinger, R.J. (1977). A study of teacher planning: Description and theory development using ethnographic and information processing methods. Unpublished doctoral dissertation, Michigan State University.

Yinger, R.J. (1980). A study of teacher planning. The Elementary School Journal, 80, 107-127.

Yinger, R.J., & Clark, C.M. (1981). Reflective journal writing: Theory and practice (Occasional Paper No. 50). East Lansing: Michigan State University, Institute for Research on Teaching.